



Department of
Environmental
Conservation

Refrigerant and HFC Policy

Stakeholder outreach for Local Governments

NYSDEC Office of Climate Change
March 2023

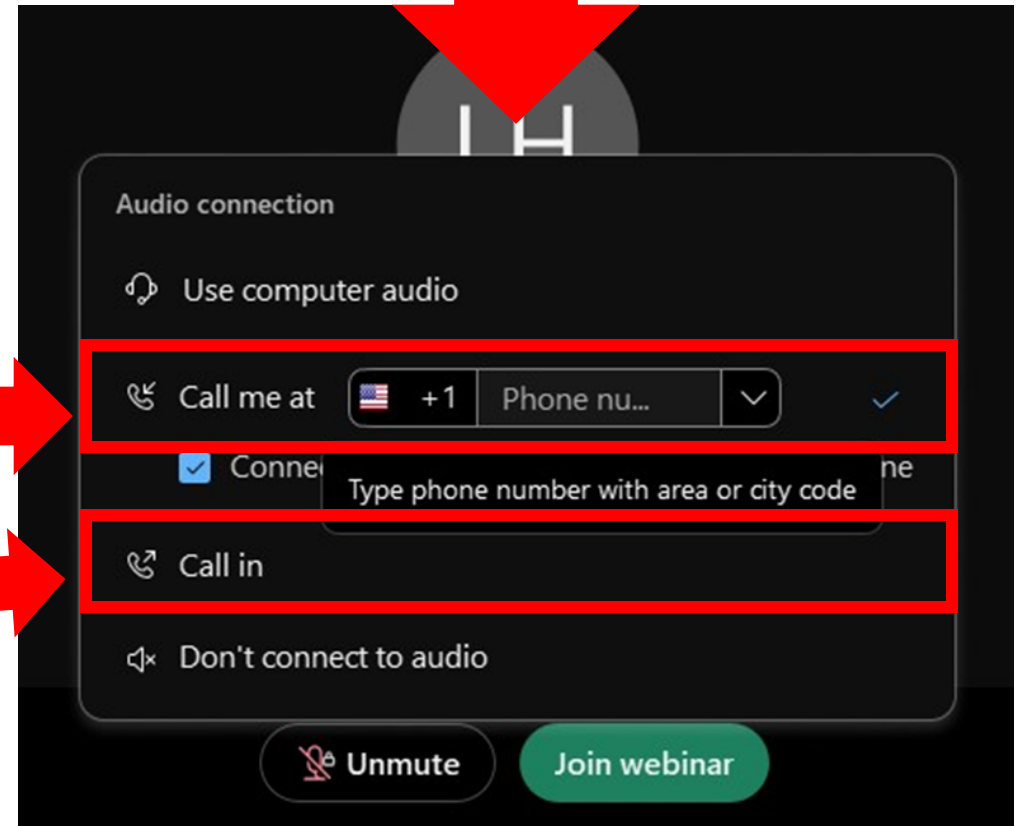
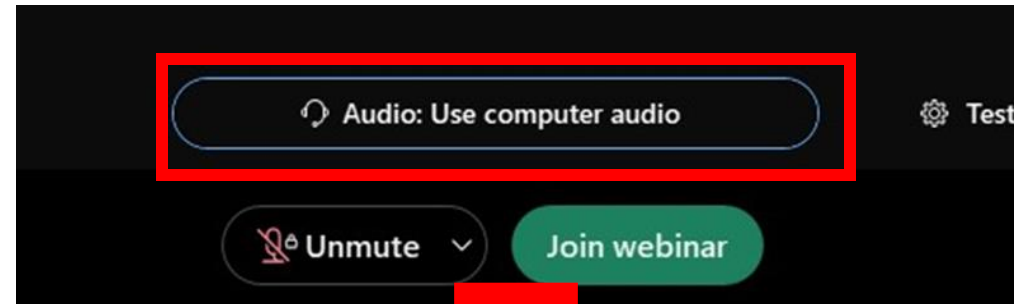
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NY Hydrofluorocarbon (HFC) Contacts

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Agenda

- Refrigerant/HFC Basics
- New and Developing Policy
 - State, National, International
- What could this mean to local governments in NY?
 - Your assets
 - Your emissions
 - Your climate change planning
- How we can work together

Useful References

EPA HFC Program: <https://www.epa.gov/climate-hfcs-reduction>

DEC CSC factsheet: <https://www.dec.ny.gov/energy/109181.html>

DEC Part 494: <https://www.dec.ny.gov/regulations/119026.html>

DEC Statewide GHGs (IPPU): <https://www.dec.ny.gov/energy/99223.html>

Climate Action Council Scoping Plan (Buildings and Waste): <https://climate.ny.gov>

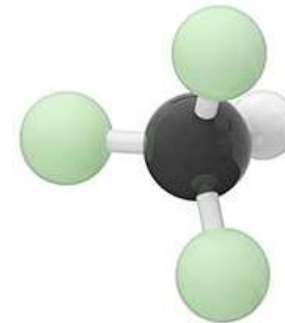
Environmental Investigation Agency (EIA): <https://us.eia.org/campaigns/climate/what-are-hydrofluorocarbons/>

Please share any other references that you find useful.

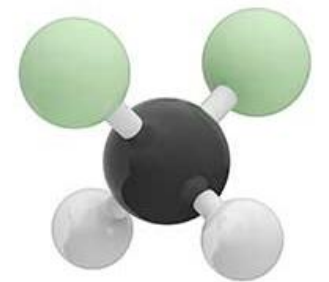
Email us for a copy of these slides climate.regs@dec.ny.gov, or visit DEC's Part 494 Website.

What are HFCs

- Hydrofluorocarbons are man-made substances developed to replace common ozone-depleting substances (like CFCs)
- They are powerful greenhouse gases
- Listed as a greenhouse gas in the NYS Climate Act



Fluoroform
(HFC-23)



Difluoromethane
(HFC-32)

Carbon, Hydrogen, Fluorine

HFC Uses Today

Refrigeration



A/C and Heat Pumps



Foam, Propellants,
and Solvents



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HFCs in NY

- Grown to 6% of all GHGs
- = 30% of 2050 NYS GHG budget
- Big sources are food stores, home A/C, and cars

Table 8. Refrigerant Emissions by End Use, 1990-2020 (mmt CO₂e GWP20)

*Other includes dehumidifiers and clothes dryers

Category/End-Use	1990	2005	2016	2017	2018	2019	2020
Refrigeration	0.01	1.21	4.93	5.30	5.65	5.98	6.33
Commercial	0.01	1.03	4.34	4.69	5.04	5.37	5.71
Residential	no	0.05	0.41	0.42	0.42	0.42	0.42
Transportation	no	0.13	0.18	0.19	0.19	0.19	0.19
HVAC	no	2.28	6.71	7.24	7.75	8.17	8.55
Commercial	no	0.02	1.68	1.97	2.25	2.55	2.84
Residential	no	0.03	1.40	1.64	1.88	2.10	2.32
Transportation	no	2.23	3.63	3.63	3.62	3.52	3.39
Other*	no	no	0.03	0.03	0.04	0.05	0.06
Residential	no	no	0.03	0.03	0.04	0.05	0.06
Commercial	no	no	+	+	+	+	+
Industrial Processes	no	0.01	0.03	0.03	0.03	0.04	0.04
Gross Total	0.01	3.50	11.70	12.59	13.47	14.24	14.97

What happens next?

Two simultaneous processes:

1. International Phasedown (Kigali)

- Lowering production and trade of HFCs
- Will decrease supply and increase costs of HFCs
- Implemented via Federal AIM Act

2. NY Climate Law & Scoping Plan

- Requires additional, faster action to control emissions
- Other concerns: safety, health, burdens on DACs
- e.g., DEC updating Part 494

Kigali and the AIM Act (2021)

EPA is implementing the AIM Act, which aligns with the Kigali goals.

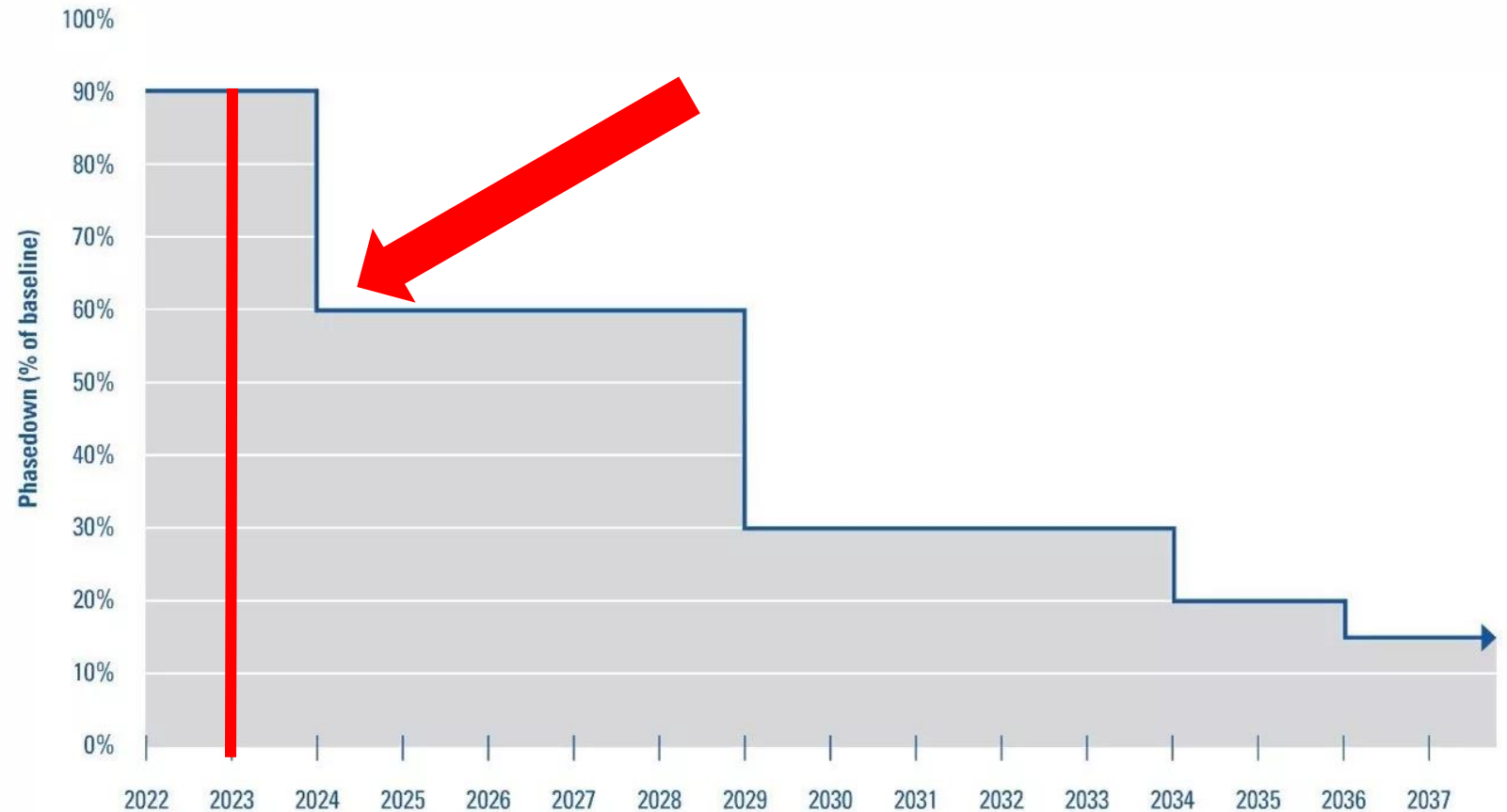
Three “legs” or rulemakings:

1. Allocations – control production and trade
2. Tech Transitions - set “GWP Limits” on new products
3. Refrigerant Management - reassess controls on leaks and disposal

Kigali and the AIM Act (2021)

The following illustrates the HFC production and consumption phasedown schedule as outlined in the AIM Act.

EPA HFC Trade and Production Phasedown Schedule



[US EPA Final Rule - Phasedown of Hydrofluorocarbons](#)

NY Climate Leadership and Community Protection Act (2019)

New York State is required to reduce GHG emissions:

- 40% by 2030, from 1990 levels (40x30)
 - 85% by 2050, from 1990 levels (85x50)
- Using a 20-year Global Warming Potential

To achieve a goal of:

- Net zero emissions by 2050

Reference: NYS Environmental Conservation Law Article 75

NY's Climate Change Scoping Plan: www.climate.ny.gov

Global Warming Potential Limits

EPA and NYS Climate Act

EPA Proposed 2025 “GWP Limit”		Potential Substances	EPA GWP100	Climate Act GWP20
Refrigeration and Ice Rinks	150	Natural Refrigerants	0-3	0-1
		Ultra-Low GWP (HFO)	1-3.7	1-5
		Low GWP Blend	140-146	376-523
	300	Low-Mid GWP Blend	237-287	490-851
HVAC	700	Mid GWP Blend	465-698	1675-2430
	Higher	HFCs	1386-1478	2995-3710

Examples from EPA (2022) Technology Transitions. List of Substitutes. Draft Technical Support Document

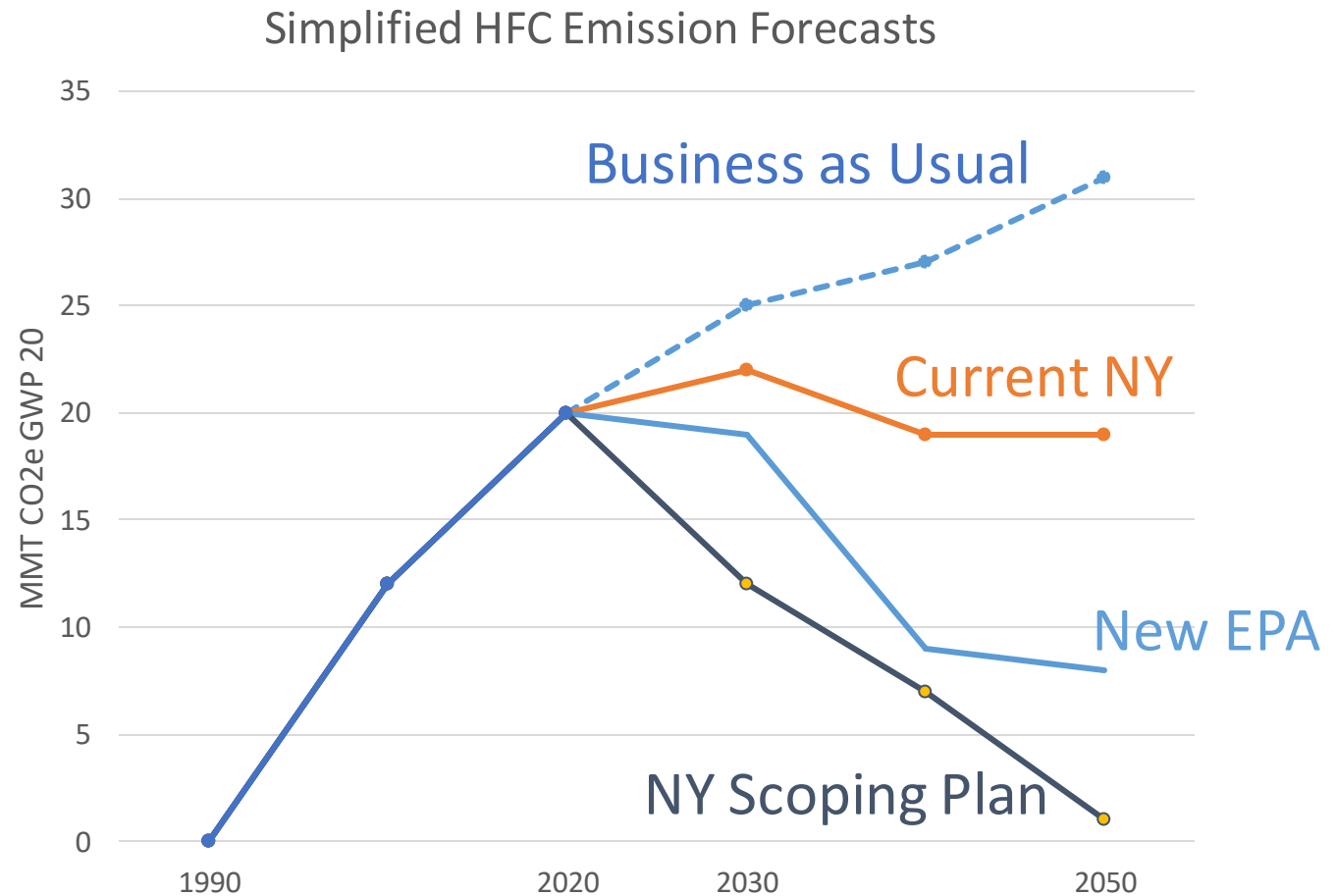
Scoping Plan and HFC Modeling

Scoping Plan recommends Part 494 update

- Building Electrification (replacing fossil fuels) has a huge impact on future emissions
- Current policy helps
- More is needed

Key Takeaway: We must address HFCs while we electrify.

Simultaneous not Sequential



What could this mean for you?

Impacts on your Operations:

- EPA and DEC may limit “new” equipment, including:
 - A/C, heat pumps, dehumidifiers, water heaters
 - Ice rink chillers
- DEC may set requirements facilities with large equipment:
 - Registration and annual reporting

What could this mean for you?

Impacts on your Community:

- Refrigerant costs will increase (Kigali and AIM Act)
- Market shift will occur over time
 - Consumers unlikely to notice most changes
- Food retail will likely be most heavily affected
 - Food security is a concern
- Scoping Plan recommends more active disposal controls (Waste Chapter)

What could this mean for you?

Impacts on your Climate Programs:

- Refrigerants could be a big % of emissions if using the same accounting as NYS Climate Act
- What to watch:
 - Large, custom-built systems (Leaks)
 - Disposal of small equipment and products
- Additional challenge: Electrification means more HFC sources

Heat Pumps and Electrification

- Heat pumps can generate HFC emissions at end-of-life
- EPR legislation to address existing HPs?
- Improve waste regulation for proper refrigerant recovery?
- Feedback about other ways to address HP HFC emission concerns

Working together

Some key ways to collaborate with DEC:

1. Provide feedback on the upcoming 494 Update
 2. Coordinate on programming
 3. Share data
 4. Align on GHG accounting and planning
 5. Find ways to support local/municipal procurement
- Up next: Climate Smart Communities grant project